



EUROPEAN COMMISSION  
Service for Foreign Policy Instruments  
The Director – Head of Service

EUROPEAN EXTERNAL  
ACTION SERVICE

Deputy Secretary General -  
Economic and Global Issues



Brussels,

**NOTE FOR THE ATTENTION OF MR J. DELBEKE  
DIRECTOR GENERAL DG CLIMA**

**Subject: Way forward – China - Carbon Capture and Storage (CCS) project – Partnership Instrument**

*Dear Joz,*

Your services have requested support from the Partnership Instrument to go ahead with the next phase of the collaborative China-EU Near Zero Emissions from Coal (NZEC) project given the political interest for the EU to engage with China in a large-scale Carbon Capture and Storage (CCS) demonstration project.

We are prepared to consider this funding, despite the significant risks for the EU that are associated with this action, provided that we get commitment and guidance from DG CLIMA on mitigating measures to address the identified risks in the attached explanatory note.

We look forward to receiving the necessary assurances to proceed with the project on the basis of a well-informed decision.



Christian LEFFLER



Tung-Lai MARGUE

Enclosed:  
Annex I – Explanatory Note

c.c.:

[Redacted] (EEAS)  
[Redacted] (FPI)  
[Redacted] (CLIMA)  
[Redacted] (DEL Beijing)  
[Redacted] (CAB MOGHERINI)  
[Redacted] (CAB CAÑETE)

## EXPLANATORY NOTE

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**Subject: ~~Way forward – China - Carbon Capture and Storage (CCS) project – Partnership Instrument~~**

### **Background**

DG CLIMA has requested support from the Partnership Instrument (PI) Annual Action Programme 2016 to the move ahead with the next phase of the collaborative China-EU Near Zero Emissions from Coal (NZEC) project. The final aim of China-EU cooperation under NZEC is the implementation of a large-scale Carbon Capture and Storage demonstration project.

In this framework, the EU is requested by the Ministry of Science and Technology of China to fund parts of phase 2B of NZEC which comprises a feasibility study of two sites (owned by Oil Company Sinopec and utility company Huaneng, respectively) as a precursor for the selection of one site as a pilot project (phase 3) for commercial Carbon Capture, Utilisation and Storage (CCUS) technology. This technology foresees the use of the captured carbon to pilot Enhanced Oil Recovery (EOR) in nearby oil fields.

The identification study, which was commissioned to support our decision-making on a possible funding of parts of phase 2B, concluded positively on the technical feasibility of conducting Front End Engineering Design (FEED) studies on both of the two proposed sites. At the same time, the study and subsequent discussions with the UK and the Asian Development Bank (ADB) as potential contributors to - and in the case of the ADB also a possible implementer of - a FEED study, have highlighted a number of important risks associated with our further involvement in the NZEC programme which we would like to share with you for discussion before proceeding further.

### **1. Risk of non-completion**

There is a high risk that irrespective of the outcomes of the feasibility studies for the two sites, the third and final phase of the NZEC initiative will not be implemented. At present, there is no legal framework in place in China forcing operators to move to CCS/CCUS technology and the financial incentive for implementing CCUS projects linked to the deployment of Enhanced Oil Recovery (EOR) technology has dwindled with the low oil prices.

### **2. Risks related to Huaneng as pilot site as opposed to Sinopec**

The identification study proposes that the EU funds parts of the feasibility study for the Huaneng owned project, as the proposed technology is cleaner and more innovative. Current discussions with your services suggest that this is also in line with your thinking. The Asian Development Bank (ADB) is implementing a small-scale pilot CCUS project at Huaneng since 2013 with funding from the UK Carbon Capture and Storage Trust Fund.

While the UK would support a converging of efforts with the EU to achieve one concrete CCUS large-scale demonstration project in China, the ADB's experience to date with their Huaneng pilot is a cause of concern, given that Huaneng does not own oil fields on which to

pilot Enhanced Oil Recovery. A solid cooperation agreement would be needed between Huaneng and oil company PetroChina, which owns and operates nearby oil fields, in order to proceed with the storage component of the small-scale CCUS pilot project, as well as with any potential FEED study later on. While there are some signs that this could soon be achieved, an agreement has been lacking for some time already. Once concluded, the ADB estimates that the completion of the pilot project, which they consider a precondition to any engagement on a FEED study (phase 2B of NZEC), would require an estimated 12 months.

It is also important to note that the proposed Huaneng technology is still some way from commercialisation and thus, it seems less fit to provide a solution to China's climate emissions in the short term. In comparison, the risks with Sinopec are lower owing to their in-house capacity and the fact that Sinopec owns both the power plant where the process would be piloted and nearby oil fields. The potential for replication of the Sinopec technology would also be greater than the one proposed by Huaneng. However, the UK is reluctant to engage on a second project in China while their first pilot is not yet delivering.

### **3. Risk related to funding gap**

The potential funding from the Partnership Instrument of EUR 7 million falls short of the total estimated budget of EUR 51 million for two feasibility studies or EUR 27.2 million for one study with the necessary accompanying regulatory and other measures.<sup>1</sup> There are positive indications that Norway could support phase 2B activities with an estimated EUR 5 million. The UK has indicated a willingness to co-finance with the EU a large-scale CCUS demonstration project in China in the framework of NZEC, but there is much uncertainty on the order and timing of this funding. Consequently, it is likely that a funding gap would need to be filled by China for the next phase of NZEC to go ahead.

### **4. Risk related to insufficient enabling conditions**

The regulatory framework of CCS/CCUS is yet to be developed in China. Any support to a FEED study should in parallel contribute to setting up a regulatory framework including adequate health, safety and environmental awareness and standards in the deployment of this technology.

### **5. Risk of political liabilities**

Financing a feasibility study undertaken by Sinopec or Huaneng, which are industrial State Owned Enterprises with significant assets, at a time when the EU economic growth is slow, exposes us to potential criticism. In addition, CCUS has not been fully piloted yet in the EU, mainly due to high investment costs and widespread adversity by public opinion associated to perceived health, safety and environmental risks.

## **Conclusions**

The NZEC programme has now reached a stage where important political decisions and financial commitments need to be made to continue the programme. To mitigate the risks described above, the political commitment for the project needs to be clearly confirmed and secured both from the EU and Chinese side at the highest possible level.

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<sup>1</sup> Although an increase of the PI contribution could be considered this would not suffice to fill the estimated funding gap.

While we understand the importance of engaging with China in the post COP-21 context, we would appreciate receiving a confirmation from DG CLIMA on the relevance and top priority of supporting specifically the roll out of CCS/CCUS technology in China through engaging in phase 2B of the NZEC programme. We would require your views on specifically which site to support and how to address the issues outlined in the note.

Equally, we need to be assured of the buy-in of China at an appropriate political level. On the one hand, there should be reasonable assurance that China's engagement in NZEC includes the provision of the necessary co-funding for the feasibility study and that political firm willingness exists to subsequently implement phase 3 of NZEC. On the other hand, it should be confirmed that China intends to develop an adequate legal/regulatory framework that would enable CCS/CCUS technology to be rolled out at national level well beyond the scope of pilot demonstration projects taken forward under NZEC. In this respect, we are of the view that any EU intervention should also comprise technical cooperation for the development and adoption of a regulatory framework on CCS/CCUS, either as an accompanying measure or as a self-standing intervention, should support to a pilot demonstration project under NZEC fail to materialise.

For planning purposes, please note that we would need to have a clear understanding by mid-February on the way forward and to receive by 29 February a project Concept Note integrating all risks and mitigating measures to allow us to include it in the Quality Support Process of the PI AAP 2016 second round. It is important to note that due to the highly technical nature of a possible PI support to NZEC, as well as the complexity of the envisaged project, your services would need to assure a firm steer and support to the project alongside FPI and EEAS. Therefore, we would expect that sufficient human resources are allocated from DG CLIMA to this action, were it to be pursued.